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MMM     MMM     TT          HH      HH      DD      DD  NN      NN      II      NN      NN      TT
MMM     MMM     TT          HH      HH      DD      DD  NN      NN      II      NN      NN      TT
MM      MM      TT          HH      HH      DD      DD  NNNN   NN      NN      II      NNNN   NN      TT
MM      MM      TT          HH      HH      DD      DD  NN      NN      II      NN      NN      TT
MM      MM      TT          HHHHHHHHHH  DD      DD  NN      NN      II      NN      NN      TT
MM      MM      TT          HHHHHHHHHH  DD      DD  NN      NN      II      NN      NN      TT
MM      MM      TT          HH      HH      DD      DD  NN      NN      II      NN      NN      TT
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MM      MM      TT          HH      HH      DD      DD  NN      NN      II      NN      NN      TT
MM      MM      TT          HH      HH      DD      DD  NN      NN      II      NN      NN      TT
MM      MM      TT          HH      HH      DDDDDDDD  NN      NN      IIIIII  NN      NN      TT
MM      MM      TT          HH      HH      DDDDDDDD  NN      NN      IIIIII  NN      NN      TT
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LL      IIIIII  SSSSSSSS
LL      IIIIII  SSSSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SSSSSS
LL      II      SSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LLLLLLLLLL  IIIIII  SSSSSSSS
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HISTORY ; Detailed Current Edit History
DECLARATIONS
MTH\$DNINT - return nearest integer as REAL*8

```
0000 1 .TITLE MTHSDNINT - Nearest Integer
0000 2 .IDENT /1-003/ ; File: MTHDNINT.MAR
0000 3
0000 4
0000 5 *****
0000 6 *
0000 7 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
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0000 24 *
0000 25 *
0000 26 *****
0000 27
0000 28
0000 29 FACILITY: MATH LIBRARY
0000 30 ++
0000 31 ABSTRACT:
0000 32 This module contains routine MTHSDNINT:
0000 33 Return the rounded double-precision floating-point argument.
0000 34
0000 35
0000 36 --
0000 37
0000 38 VERSION: 1
0000 39
0000 40 HISTORY:
0000 41
0000 42 AUTHOR:
0000 43 Jonathan M. Taylor, 28-Jul-77: Version 0
0000 44
0000 45 MODIFIED BY:
0000 46
0000 47
0000 48
```


MTHSDNINT
1-003

J 10
- Nearest Integer
HISTORY ; Detailed Current Edit History 16-SEP-1984 01:19:32 VAX/VMS Macro V04-00 Page 2
6-SEP-1984 11:22:26 [MTHRTL.SRC]MTHDNINT.MAR;1 (2)

0000 50 .SBTTL HISTORY ; Detailed Current Edit History
0000 51
0000 52
0000 53 ; Edit History for Version 1 of MTHSDNINT
0000 54 :
0000 55 : 0-3 - Remove MTH\$FLAG_JACKET. TNH 5-July-78
0000 56 : 1-001 - Update version number and copyright notice. JBS 16-NOV-78
0000 57 : 1-002 - Add "" to PSECT directive. JBS 22-DEC-78
0000 58 : 1-003 - Make it work. SBL 05-Feb-79

```
0000 60 .SBTTL DECLARATIONS
0000 61
0000 62 :
0000 63 : INCLUDE FILES:
0000 64 : NONE
0000 65 :
0000 66 :
0000 67 :
0000 68 : EXTERNAL SYMBOLS:
0000 69 : NONE
0000 70 :
0000 71 :
0000 72 :
0000 73 : MACROS:
0000 74 : NONE
0000 75 :
0000 76 :
0000 77 :
0000 78 : PSECT DECLARATIONS:
0000 79 : .PSECT _MTH$CODE PIC, SHR, LONG, EXE, NOWRT
0000 80 :
0000 81 :
0000 82 : EQUATED SYMBOLS:
0000 83 : NONE
0000 84 :
0000 85 :
0000 86 :
0000 87 : OWN STORAGE:
0000 88 : NONE
0000 89 :
```

```
0000 91 .SBTTL MTH$DNINT - return nearest integer as REAL*8
0000 92
0000 93 :++
0000 94 : FUNCTIONAL DESCRIPTION:
0000 95 : Returns the rounded (away from zero) argument.
0000 96 :
0000 97 :
0000 98 : CALLING SEQUENCE:
0000 99 : NONE
0000 100 : Nearest_integer.wd.v = MTH$DNINT (arg.rd.r)
0000 101 :
0000 102 :
0000 103 : INPUT PARAMETERS:
0000 104 : The input parameter is a double-precision floating-point value
0000 105 : and is call-by-reference.
0000 106 :
0000 107 :
0000 108 : IMPLICIT INPUTS:
0000 109 : NONE
0000 110 :
0000 111 : OUTPUT PARAMETERS:
0000 112 : NONE
0000 113 :
0000 114 : IMPLICIT OUTPUTS:
0000 115 : NONE
0000 116 :
0000 117 : COMPLETION CODES:
0000 118 : NONE
0000 119 :
0000 120 : SIDE EFFECTS:
0000 121 : Reserved Operand and Floating Overflow exceptions can occur.
0000 122 :
0000 123 :
0000 124 :--
0000 125 :
0000 126 :
0000 127 :
0000 128 .ENTRY MTH$DNINT, ^M<R2, R3>
0002 129 ADDD3 #0.5, @4(AP), R0 ; R0/R1 = arg + 0.5
0007 130 BGTR 1$ ; branch if positive
0009 131 SUBD #1.0, R0 ; R0/R1 = arg - 0.5
000C 132 1$: EMODD R0, #0, #1, R2, R2 ; R2/R3 = fraction_part(R0/R1)
0012 133 SUBD2 R2, R0 ; R0/R1 = integer_part(R0/R1)
0015 134 RET
0016 135
0016 136
0016 137 .END
```

```
50 04 BC 00 000C 0000 128
03 14 0002 129
08 62 0007 130
50 08 0009 131
52 00 000C 132 1$:
50 50 0012 133
52 62 0015 134
04 0016 135
0016 136
0016 137
```

MTH\$DNINT
Symbol table

- Nearest Integer

M 10

16-SEP-1984 01:19:32 VAX/VMS Macro V04-00
6-SEP-1984 11:22:26 [MTHRTL.SRC]MTH\$DNINT.MAR;1

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(4)

MTH\$DNINT 00000000 RG 01

+-----+
! Psect synopsis !
+-----+

PSECT name	Allocation	PSECT No.	Attributes														
ABS	00000000 (0.)	00 (0.)	NOPI	USR	CON	ABS	LCL	NOSHR	NOEXE	NORD	NOWRT	NOVEC	BYTE				
MTH\$CODE	00000016 (22.)	01 (1.)	PIC	USR	CON	REL	LCL	SHR	EXE	RD	NOWRT	NOVEC	LONG				

+-----+
! Performance indicators !
+-----+

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.09	00:00:01.18
Command processing	106	00:00:00.46	00:00:03.45
Pass 1	77	00:00:00.37	00:00:01.73
Symbol table sort	0	00:00:00.00	00:00:00.00
Pass 2	39	00:00:00.31	00:00:01.54
Symbol table output	1	00:00:00.01	00:00:00.01
Psect synopsis output	3	00:00:00.02	00:00:00.14
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	257	00:00:01.27	00:00:08.05

The working set limit was 900 pages.
1410 bytes (3 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 1 non-local and 1 local symbols.
137 source lines were read in Pass 1, producing 10 object records in Pass 2.
0 pages of virtual memory were used to define 0 macros.

+-----+
! Macro library statistics !
+-----+

Macro library name	Macros defined
_\$255\$DUA28:[SYSLIB]STARLET.MLB;2	0

0 GETS were required to define 0 macros.
There were no errors, warnings or information messages.
MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS\$:MTH\$DNINT/OBJ=OBJ\$:MTH\$DNINT MSRC\$:MTH\$DNINT/UPDATE=(ENH\$:MTH\$DNINT)

0259 AH-BT13A-SE
VAX/VMS V4.0

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MTHDLOG
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MTHDATANH
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MTHDINT
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MTHDFLOOR
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